

American Fruit Grower

NOVEMBER • 1953





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AMERICAN FRUIT GROWER

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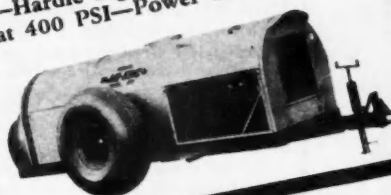
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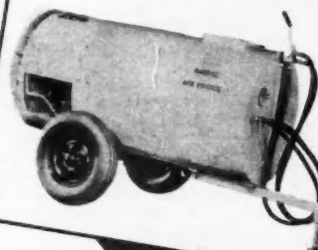
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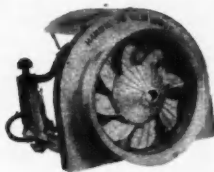
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All the advantages of air blast spraying at low cost provided in this Hardie Air Prince specially built for the grower whose needs do not require the larger Hardies. Handles all standard concentrate and dilute sprays. 31 HP engine, 29" Hardie fan, Wun-pull valve control, 200 Gal. steel tank, paddle type agitator, high pressure Hardie pump delivering 12 GPM at 400 PSI. Hose connection for hand gun spraying.



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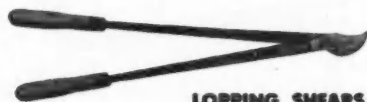
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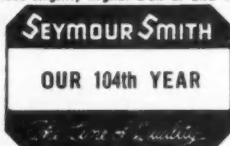
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LETTERS TO THE EDITOR

Solutions to Animal Damage

Dear Editor:

The September issue contains a "Letter to the Editor" from Robert L. Soucy relative to damage by deer and porcupines. My own experience at my summer home in Vermont may be helpful.

Each fall I wrap the trunk of each tree in a strip of copper wire screen tied with a couple of pieces of soft twine. This has been completely successful in protecting young trees from damage by mice and rabbits.

At the same time I protect the trees against deer by wrapping a strip of four-foot chicken wire around the branches of each tree, the strips running from five feet in length to eight or 10 feet for trees up to seven or eight years old. For the smallest trees it may be necessary to drive a slender post into the ground to anchor the wire. If the trees are sturdy, simply bring the ends of the screen together and bend over a few ends to keep them in place. The tension and branches will hold the strips. Leave them on until late in the spring. Wethersfield, Conn. J. Ralph Spalding

Dear Editor:

In answer to a recent "Letter to the Editor" by Robert L. Soucy and his problem of deer damage, I would like to suggest that he spread sheep dung around his trees. It is not a well known fact that deer will not graze on the same tract of land where sheep have been. A few sheep in the orchard would also do wonders in keeping down grass, and they will not harm the trees as long as they have plenty to eat. Forest Junction, Wis. R. N. Knauf

Dear Editor:

I am convinced that if Mr. Soucy is still having difficulty with porcupines and deer, a fence is the answer. We have 500 acres fenced with an eight and one-half foot fence, three spans of three-foot woven wire, and three barbed wires on top; and we have no trouble now. Mariposa, Calif. A. J. Phelps

Dear Editor:

I read with interest the "Letter to the Editor" in the September issue by Robert L. Soucy about his difficulties in keeping deer from ruining his orchard. We have found the best method is to secure at least two dogs. Mr. Soucy will discover that deer or any wild animal will steer clear of his orchard by using this method. Pittsburgh, Pa. Lloyd R. Blough

A brand new repellent comes from Dr. David C. White and his colleagues at Pennsylvania State College in the form of bone tar oil. It has been remarkably successful as a deer repellent in preliminary trials. Look for the story about this new repellent in an early issue of AMERICAN FRUIT GROWER.—Ed.

Will Supply Grafts of St. Lawrence Apple

Dear Editor:

In the August issue of AMERICAN FRUIT GROWER, you published a request for scion

wood of the old St. Lawrence apple, of which I have two trees.

It has occurred to me that some of your other readers might like to have scions, and I would be glad to send anyone interested in this variety either a small tree or scion wood with which to graft their own trees.

I have read your magazine for about 40 years, and this is the first time I have ever had a variety anyone else desired. I have a 10-year-old orchard with over 50 varieties, about 40 of which are of bearing age, and I can supply scions of many of them. 34 Main St. Sheldon S. Wilcox
Hamilton, N.Y.

Misunderstanding of Marketing Agreements

Dear Editor:

I was interested in the article on marketing agreements in your August issue.

To me fruit means apples. It is my understanding that apples can only take advantage of marketing agreements in the states of Washington, Oregon, and Idaho. It might be possible to request Secretary Benson to suggest to Congress that this discrimination be removed. I believe that there is a large amount of misunderstanding of marketing agreements in the rank and file of apple growers—that they are hastily connected with government give-away programs. Mexico, N.Y. M. S. Carpenter

This so-called discrimination is due to the leaders in the apple industry who asked that apples be excluded. Maybe it is time for a change. If so, it must be the apple industry that will have to reverse itself.—Ed.

Strikes at Critical Times

Dear Editor:

In your excellent editorial on strikes at critical times in the fruit industry you do not suggest a remedy. The remedy is to take the labor trust bulls by the horns and dehorn them. Combinations in restraint of trade and commerce are prohibited by the Sherman Anti-Trust Law, and conspirators who stop production and halt trade and commerce until their demands for higher wages and shorter hours and vacations with pay should be answerable to the anti-trust law. However, politicians seeking organized labor votes have secured legislation exempting these monopolists from the provisions of the law. Wamic, Ore. David Stancliff

Dear Editor:

I was very much interested in your editorial in a recent issue entitled, "Organized Labor and Perishable Foods."

As it is now in our close-knit economic life, units of capital or labor suffer severely when a local strike disrupts smoothly running operations. Then you have a splendid example of damage done to many people, including the consuming public, as was pointed out in your editorial.

Under the two-party system I feel that political parties cater to capital and labor for votes and are blind to the need of economic liberty, economic security, and economic justice on top levels. Stepney Depot, Conn. Eugene L. Richards

AMERICAN FRUIT GROWER

CALENDAR OF COMING MEETINGS AND EXHIBITS

Nov. 3-5—Florida State Horticultural Society 66th annual meeting, Daytona Beach.—E. L. Spencer, Sec'y, Bradenton.

Nov. 5-6—Minnesota Fruit Growers Association and Wisconsin State Horticultural Society joint annual meeting, Hotel LaCrosse, La Crosse, Wis.—J. D. Winter, Sec'y, Mound, Minn.

Nov. 10—Illinois grower tour of retail fruit outlets and markets.—Harold J. Hartley, Sec'y, Carbondale.

Nov. 14-15—Student Horticulture Show, Oklahoma A & M College, Stillwater.—Fred LeCrone, Stillwater.

Nov. 16-17—Wisconsin State Horticultural Society annual meeting, Hotel Fond du Lac, Fond du Lac.—H. J. Rahmlow, Sec'y, Madison.

Nov. 18—Iowa Fruit Growers Association annual meeting, Iowa State College, Ames.—R. G. Raines, Sec'y, State House, Des Moines.

Dec. 1-2—Oklahoma Pecan Growers Association annual meeting, Chandler.—Fred LeCrone, Asst. Sec'y, Dept. of Hort., Stillwater.

Dec. 1-3—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—H. D. Hootman, Sec'y, East Lansing.

Dec. 3-4—Kansas State Horticultural Society annual meeting, Manhattan.—Earl Stoughton, Pres., Hutchinson.

Dec. 3-4—Ohio Pesticide Institute 7th annual meeting, Seneca Hotel, Columbus.—J. D. Wilson, Sec'y, Ohio Agr. Exp. Station, Wooster.

Dec. 3-4—Oregon State Horticultural Society 65th annual meeting, Oregon State College, Corvallis.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 4-9—New Jersey Mid-Atlantic Farm Show, Convention Hall, Atlantic City, N.J.—Clement B. Lewis, Jr., Gen. Mgr., First Mechanics Bank Bldg., Trenton 8, N.J.

Dec. 7-9—New Jersey State Horticultural Society annual meeting, Claridge Hotel, Atlantic City.—A. J. Farley, Sec'y, New Brunswick.

Dec. 7-9—Washington State Horticultural Association 49th annual meeting, Wenatchee.—John C. Snyder, Sec'y, Pullman.

Dec. 7-10—Entomological Society of America annual meeting, Biltmore Hotel, Los Angeles, Calif.—Dr. Ernest N. Cory, Div. of Entomology, U. of Maryland, College Park.

Dec. 8-9—Connecticut Pomological Society annual meeting, Hotel Bond, Hartford.—Sherman P. Hollister, Sec'y, Storrs.

Dec. 10-11—Nut Growers Society of Oregon and Washington annual meeting, Marine Room, Multnomah Hotel, Portland, Ore.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 10-11—Tennessee State Horticultural Society annual meeting, Andrew Jackson Hotel, Nashville.—A. N. Pratt, Sec'y, 708 Employment Security Bldg., Nashville, Tenn.

Dec. 10-11—Peninsula Horticultural Society annual meeting, Salisbury, Md.—Robert F. Stevens, Sec'y, Newark, Del.

Dec. 10-11—Tennessee State Horticultural Society 48th annual convention, Andrew Jackson Hotel, Nashville.—A. N. Pratt, Sec'y, 708 Employment Security Bldg., Nashville.

1954 Meetings

Jan. 4-5—Maryland State Horticultural Society 56th annual meeting, Hotel Alexander, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 4-5—Missouri State Horticultural Society annual meeting, Daniel Boone Hotel, Columbia.—W. R. Martin, Jr. Sec'y, Columbia.

Jan. 5-7—Massachusetts Fruit Growers Association 68th annual meeting, Municipal Auditorium, Worcester.—A. P. French, Sec'y, Amherst.

Jan. 5-7—Western Washington Horticultural Association annual meeting, Fruitland Grange Hall, Puyallup.—Morrill Delano, Sec'y, Puyallup.

Jan. 8 (tentative)—Kentucky State Horticultural Society annual meeting, Paducah.—W. W. Magill, Sec'y, Lexington.

Jan. 8-9—Western Colorado Horticultural Society 11th winter conference, Mesa College, Grand Junction.—L. L. Mariner, Sec'y, Box 487, Grand Junction.

Jan. 13-15—Indiana Horticultural Society annual meeting in joint session with American Pomological Society annual meeting, Murat Temple, Indianapolis.—R. L. Klackie, Sec'y, Ind. Society, Purdue University, West Lafayette. W. D. Armstrong, Sec'y, APS, Princeton, Ky.

Jan. 19-21—Maine State Pomological Society annual meeting, in conjunction with Trade Show, Lewiston Armory, Lewiston.—F. J. McDonald, Sec'y, Monmouth.

Jan. 20-22—New York State Horticultural Society annual meeting, Rochester.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 25-27—Virginia State Horticultural Society 58th annual meeting, Hotel Roanoke, Roanoke.—John F. Watson, Sec'y, Staunton.

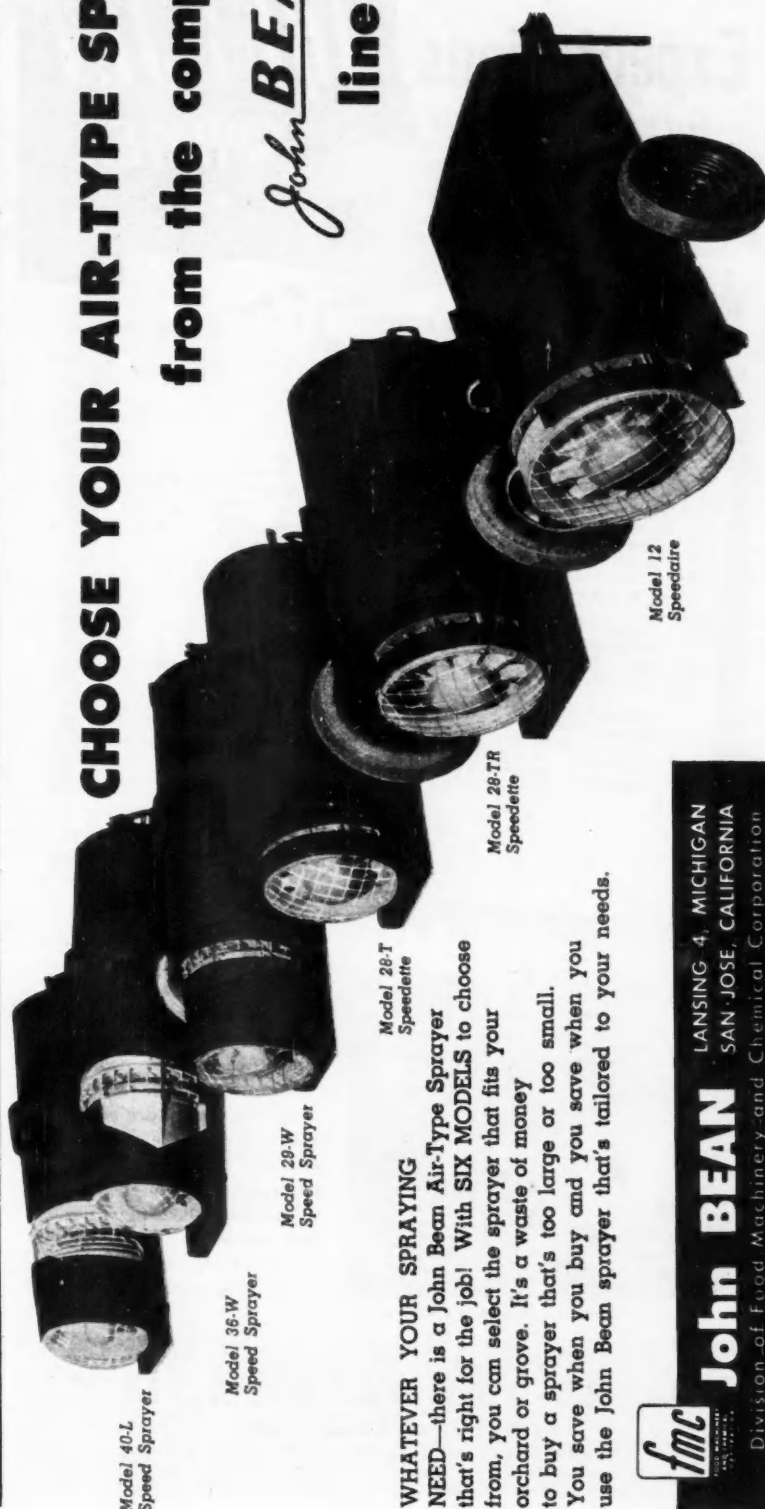
Jan. 27-29—New York State Horticultural Society annual meeting, Kingston.—D. M. Dalrymple, Sec'y, Lockport.

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Speed Sprayer

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WHATEVER YOUR SPRAYING

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Says Mr. H. Grant Gardner

CARDOX AQUA-JET SPRAYER

MODEL 54Y



H. GRANT GARDNER
Fruitland, Idaho

Hurst Industries, Inc.
San Jose, California

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Last spring I and another grower of limited acreage, purchased one of your Cardox Orchard Power Sprayers. Our complete program of dormant, thinning spray and summer pest control, together with recent application of hormone stop drop, has been accomplished with a maximum of efficiency and a minimum of effort.

The performance of your machine compares most favorably with all types of competition and your prompt service and advice have been very gratifying.

Anyone contemplating an air displacement fog-type sprayer should, in my estimation, thoroughly investigate Hurst Industries' Aqua-Jet Orchard Sprayer. It will measure up to their fullest expectations.

Yours very truly,

H. Grant Gardner
H. Grant Gardner



One man on the tractor does the work of a whole crew!

● Time after time, owners are kind enough to tell us of the great performance of their CARDOX Aqua-Jet Sprayers. This performance results from the exclusive Aqua-Jet principle of high-velocity air blast, high pressure pump and impinging jets—the most efficient combination yet devised for thorough coverage of the most trees per hour. See your Aqua-Jet dealer now for full facts on today's most remarkable sprayer.

HURST INDUSTRIES, INC.
SAN JOSE, CALIFORNIA
SUBSIDIARY OF CARDOX CORPORATION

THE QUESTION BOX

What companies do vacuum cooling in California?—California

The two companies engaged in vacuum cooling commercially in California are the Vacuum Cooling Company, 260 California St., San Francisco 11, and the Gay Engineering Company at Los Angeles.

Can you tell me the difference between the Clark dwarfs and Malling rootstocks?—Missouri

Professional horticulturists have long wondered what the difference is between Clark dwarfs and Malling rootstocks. It was recently disclosed that there is no difference between the Clark and Malling VII, although there are some who would dispute this viewpoint.

Who manufacturers the apricot cutter developed by University of California engineers?—Washington

A manufacturer has not yet been selected. For further information, write Ralph Parks, Extension Agricultural Engineer, College of Agriculture, University of California, Davis, Calif.

What is chelated iron and what is it used for?—Florida

To produce chelated iron, salts of ethylenediamine tetraacetic acid (EDTA) are combined with iron. Such organic compounds that combine with iron are called chelated irons and are not easily broken down in the soil. Experiments with chelated irons have been made in Florida with citrus. Where other materials have failed to cure iron chlorosis, a disease which occurs throughout the citrus growing region of Florida, chelated iron has proven successful. There are two principle suppliers of chelated iron, namely Alrose Chemical Company, Providence, R. I., and Bersworth Chemical Company, Framingham, Mass.

Where can I obtain an air thermostat which is used as an alarm to awaken the fruit grower when the temperature drops to the danger point?—Oklahoma

Try the Minneapolis-Honeywell Regulator Company, 2747-53 Fourth Ave., South, Minneapolis 8, Minn.

Can you tell me where I can obtain Cleopatra Mandarin rootstock for Ruby Red grapefruit?—California

Try the Armstrong Nurseries, Ontario, Calif., or the California Nursery Co., Niles, Calif.

AMERICAN FRUIT GROWER

ANTIBIOTICS

A New Weapon for FIRE BLIGHT CONTROL

The wonder drugs, so effective in saving human life, now show promise of being a remarkably effective means of fighting costly plant diseases

By **ROBERT N. GOODMAN**
Missouri Agricultural Experiment Station

THE use of antibiotics to control bacterial diseases of horticultural crops is a recent and very promising development. In fact, the earliest experiments using these wonder drugs to control fire blight of apples were reported in 1951 by Murneek at Missouri and in 1952 by Heuberger and Poulus at Delaware. Both of these investigations indicated that antibiotics were capable of reducing blight infections.

Their results and the fact that extremely severe crop losses and tree damage had been sustained by Missouri apple growers for the past six years, prompted a detailed study of fire blight control with antibiotics.

Greenhouse Experiments—From laboratory and greenhouse investigations during the fall and winter of 1952 it was established that foliar sprays with antibiotics could completely control fire blight in artificially inoculated one-year-old apple whips. The antibiotic concentration and formulation necessary to provide this control was also established.

These studies disclosed that antibiotics functioned as "systemic bacteriacides," that is to say, they are capable of penetrating the plant tissue itself. In this way the tissues are protected against internal invasion by the bacteria. The fire blight organism may, of course, penetrate the natural openings of the blossoms, leaves, and stems, but upon entering the plant cells they are inactivated by the antibiotic. Greenhouse tests have shown that the antibiotic remains effective

within the plant tissue for at least 24 hours after a spray application.

The most effective antibiotics used in our greenhouse studies were streptomycin and terramycin. The formulation which afforded complete control against artificially inoculated trees was a combination of streptomycin and terramycin, each at 250 parts per million (ppm), applied as a foliar spray. Unfortunately, streptomycin at this concentration caused some foliage injury. When streptomycin was reduced to 125 ppm, 40 to 50 per cent control was obtained and the injury was practically eliminated.

There was additional justification

for this reduction in streptomycin concentration, since it was felt that the greenhouse type of artificial inoculation was much more severe than that which would be encountered under orchard conditions. The reduction of antibiotic concentration of the spray also enhanced the economic feasibility of this method of disease control.

Field Experiments—The actual antibiotic concentrations used in the field experiments were 250 ppm streptomycin plus 250 ppm terramycin, 125 ppm streptomycin plus 250 ppm terramycin, and 100 ppm streptomycin alone. The antibiotic formulations also
(Continued on page 16)

OHIO TESTS PROVE VALUE OF NEW TREATMENT

AN historical development took place at the Ohio Agricultural Experiment Station this past season. Fire blight, heretofore an uncontrollable bacterial disease of apples and pears, was for the first time controlled through spraying. The chemical used was the antibiotic, streptomycin.

Jonathan apple trees on May 7, at early bloom, were sprayed with various chemicals, among them streptomycin. The next day all trees, including checks which received no spray, were inoculated with a spray suspension of the fire blight bacteria, just to make sure the trees had a chance to contract the disease. The following day, May 9, another spray of streptomycin and the other chemicals was applied. A repeat application was made at petal fall. Counts on the

amount of infection 18 days later showed the following results:

<i>No Spray</i>
83% blossoms blighted
20% terminal twigs blighted
<i>Streptomycin Sprayed</i>
2% blossoms blighted
0% twigs blighted

No other chemical tested approached the excellent control given by streptomycin, except possibly terramycin, another antibiotic, which gave fair control.

Streptomycin sprays at concentrations of 120 ppm and 60 ppm were almost equally effective. Two or three applications seem necessary as the bactericidal effect of the antibiotic lasts for only a short time.

It is reported that a limited amount of a commercial streptomycin preparation will be available for trial next year.—Eldon S. Banta.



The entire product of Mohr's 200-acre fruit farm is sold from this roadside market. Adequate off-the-highway parking makes it easy for motorists to stop. Right—Free apples for the small fry can help establish return customers, growers say.



Don't miss out on ROADSIDE PROFITS

Orchard-fresh fruit can be big business when modern sales methods are used in operating roadside markets

By R. T. MEISTER

FRESH fruit, fair prices, and full measure all add up to profits at the roadside market, according to statements of roadside market operators made recently in a survey conducted by AMERICAN FRUIT GROWER.

Men like Frank J. Mohr of Mohr's Orchards, Fogelsville, Pa., prove that roadside selling can be big business, for they sell the entire fruit product from their 200-acre fruit farm direct to the roadside customer. Ed Knight of Greenville, R.I., sells all the fruit his orchards can produce and buys more from other growers. Dorrance T. Green of Wilbraham, Mass., sells all he can grow, but takes pride in the fact that he sells only what he can grow.

These growers and many others like them find good profit in roadside

selling because customers know that what they buy is fresh and of good quality, and all of these successful growers constantly work to keep up the confidence of their customers. Dorrance Green says in this regard, "We give a fair package always, at a fair price. Our quality of fruit never varies, and many customers order 'sight unseen' from their cars."

James Shoemaker, Jr., of Ham-monton, N.J., is always sure that the customer gets good, full measure "and a little more," and sells all the produce of his 60 acres in fully ripened, orchard-fresh condition. He even lets customers help with the picking if they wish, or if they are in especial hurry for an order.

Cheerful, personal service and plenty of it seems to be another key-

note to success on the roadside, and the most successful have a good sales staff on hand for weekends, although they usually are able to handle the business themselves through the week. Dorrance Green feels, though, that personal service either from him or his wife helps keep good customers who like to deal with the owner.

Retail marketing from the orchard has many real advantages for the grower, in that it often provides his only way of getting a net return on his No. 2 apples. He can also get into the profitable retailing of byproducts such as cider and other fresh fruit drinks, and he can sell some of his berries and smaller cash crops to the many people who are attracted by the larger displays of his major fruits.

Many growers join James Shoemaker, Jr., in their pleasure at having good cold storage facilities that let them sell into, or through, the winter. Last August Shoemaker put 200 twelve-pint slats of blueberries into

cold storage and took orders at his roadside stands for Thanksgiving use. He sold every pint at 50 cents, he says.

All winter long Dorrance Green sells right from his storage, and Christiansen's Orchard at Slatersville, R.I., does most of its business through the winter from its cold storage.

To help insure repeat sales, of course, consistent good quality of fruit comes first, but there are also

when they buy that the fruit at the bottom of the pack will be of the same quality as that on top.

Growers find it a good custom to refund money or replace produce willingly if it has been found unsatisfactory. Also they like to let customers buy any quantity they want and at steady prices. Dorrance Green sets his prices at the beginning of the season, and the customer can count on their remaining the same throughout the season.

A storage built close to the roadside lets the Christiansens operate their salesroom from harvesttime in September until the last crisp apple is sold in spring.



Attractive, readable signs help any roadside market. Above—Sign attracts motorists, while (left above) a warning gives drivers a chance to slow down. Then drivers can see at a glance (left below) what fresh fruits the orchardist has to offer.

Advertising helps attract customers to the roadside market, and Christiansen's Orchard and others have found that radio advertising produces the quickest results; however, many get good response from local newspaper ads. All kinds of gimmicks are used to attract motorists, such as pet animals to amuse the children, special festivals, dressing salespeople in costume, etc. Many growers have their salesrooms in storages where customers can watch loading machines and packing operations, and some have glassed-off cider presses for the customers to watch in operation.

A free apple to each youngster

helps draw regular customers to the stands of George Smith at Slatersville, R.I., and Dorrance Green. "We have heard that some children insist that their parents buy their apples where they always get a free one," Green says.

One of the best attractions to a roadside market is plenty of off-the-road parking space. Many drivers will drive on, rather than stop on the highway.

Good, large, readable signs along the road, far enough in advance of the market, help attract customers. The grower should remember that the driver of a fast-moving car has little time to read small print or to figure out a complicated sign.

A number of devices have been found to help with day to day operation of the stand. Warning bells, such as those found at gas stations, have been installed by some growers to announce the arrival of customers, according to *Apple Institute News* of the New York & New England Apple Institute, Inc. This permits the growers to leave the stand unattended during the week when business is slight and they need go to the stand only when the bell rings.

Harold Rogers of Southington, Conn., has established the practice of placing a box of change beside his five-cent cider dispenser and letting the customer help himself to change. Rogers feels that this display of confidence in the customer helps develop the customer's confidence in him.

On the whole it has been discovered that cheaper apples sell better if packed in large containers, while the better grade fruit can be sold in two-, four-, and eight-quart containers. Also, it has been found that fruit of about the same quality as that found in stores should be priced high enough to prevent unfair competition with the stores. The lower grades which cannot compete may be sold more cheaply.

The evidence gathered in this survey shows that the roadside market can be highly profitable if the grower keeps in mind the qualities of human nature: People have confidence in a salesman who always treats them fairly; customers will patronize a place that gives them a "good buy"; customers sometimes have more confidence if they deal with the owners, or if the sales person is cheerful, businesslike, and shows personal interest in them; drivers are lazy enough to by-pass the stand that does not have good parking facilities and that does not place signs in advance on the road; and last, but most important, the customer will patronize the dealer whose produce is truly orchard or garden fresh.

THE END

many little ways to help build up a good, steady clientele. Confidence in the grower is the most important facet, and customers should know

SPECTROGRAPHIC Leaf Analysis . . .

A New Service for Fruit Growers

By A. L. KENWORTHY

Michigan State College

TESTING the soil for nutrients tells what is in the soil for fruit trees to use. Testing the leaves for nutrients tells what the tree is actually securing. This distinction is important because a soil may be well supplied with nutrients but the tree may not be getting them.

Happily, the post-war development of the spectrograph has made it possible to analyze leaves rapidly and effectively, so as to provide fruit growers with the information they need to determine fertilizer needs of fruit trees. Howard Bedell, National Spectrographic Laboratories, Cleveland, Ohio, deserves much credit for the development of the spectrograph for this purpose.

In 1948, Michigan State College initiated a co-operative program with Bedell's laboratories that resulted in determining the proper procedures necessary for analyzing fruit tree leaves. In 1949, a Grower Service was undertaken on a trial basis, in which Bedell's laboratories made the spectrographic analysis. The Michigan Agriculture Experiment Station soon developed its own spectrographic laboratory, so that by 1953 the analyses were made there.

Using the spectrograph permits a rapid analysis of fruit tree leaves at a relatively low cost. Leaves are first dried and ashed. Then the leaf ash is burned with a high voltage electric arc. This causes each of the elements to produce a characteristic light that shows on a photographic plate as a narrow dark band. The amount of light produced by the element tells how much of the element is present.

The Leaf Analysis Service in Michigan is organized so that leaf samples are collected by extension agents and growers. The grower selects the location to be sampled and supplies information concerning previous fertilizer applications, soil management practices, tree condition, and spray program. All samples are collected in the same manner during July and August, dried and sent to the department of horticulture to be prepared for analysis. E. J. Benne and

Ralph Bacon, chemists, analyze the leaves and send the data to the horticulture department for interpretation.

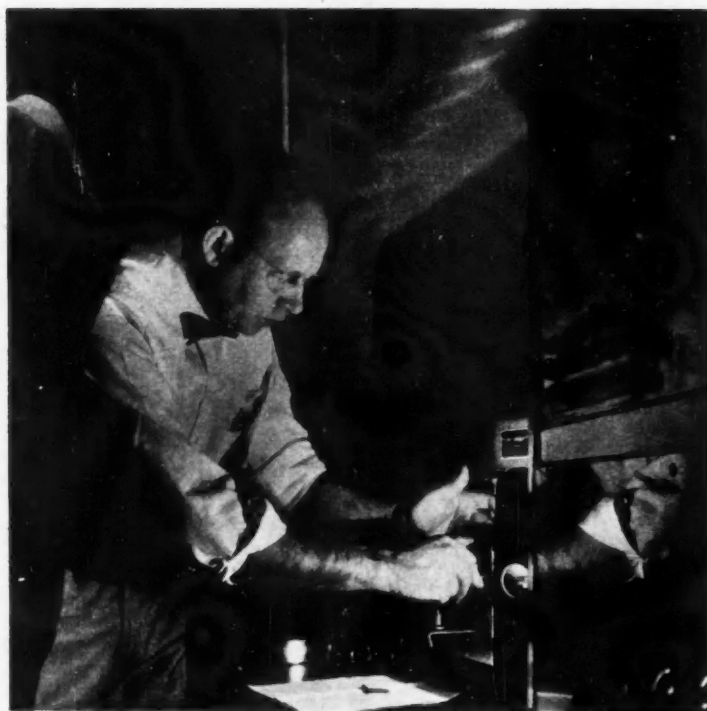
A Nutrient-Element Balance Chart is prepared from the data and sent with general fertilizer suggestions to the local extension agent who relays the information to the grower and gives him further aid in planning his fertilizer program. A charge of \$5 is made for the analysis but a large part of the analytical costs is absorbed by the experiment station.

Analyses are returned to the grower in about 12 weeks from the time the sample is taken—two weeks if necessary. This is soon enough for him to alter the fertilizer program at least by the following spring. At present the Leaf Analysis Service includes only the McIntosh, Jonathan, Delicious, and Northern Spy apple; the Halehaven and Elberta peach; the Bartlett pear, and the Montmorency

cherry. Additions are being made to the list as rapidly as possible. If analysis is desired for a variety not on the list, a standard sample is necessary for comparison.

The use of leaf analysis to determine the fertilizer requirements of crops is not a new idea. Leaf analysis has been used in research for many years to confirm nutritional deficiencies and fertilizer responses. What is new is the possibility of foretelling what fertilizers may become deficient and the prevention of fertilizer applications not needed.

The idea of a Grower Service is gaining favor in other localities. Dr. H. Lundegardh has been using the composition of pasture grasses to foretell the fertilizer needs of pastures in Sweden. Farm Advisor G. D. Worswick uses analyses of prune, peach, and almond leaves to advise
(Continued on page 15)



For spectrographic purposes leaf ash is burned with a high voltage electric arc, being operated here by Howard Bedell, and a photographic film made. The intensity of the light produced by the elements on the photographic plate tells how much of the element is present. Photograph courtesy *Business Week*.

State NEWS

- Apple Crop Reduced by Drought
- Season of Hort Meetings Is Here

MICHIGAN—Tonnage of tree fruits produced in Michigan in 1953 is 17 per cent higher than in 1952 and 16 per cent higher than the 10-year average. Crops are slightly above average for apples, pears, sweet and sour cherries, and plums; slightly below average for peaches. Grape tonnage is a little higher than in 1952. Annual value of the small fruit crop is at an all-time high of approximately \$10 million.

The program of Michigan State Horticultural Society annual meeting in the Civic Auditorium at Grand Rapids, December 1-3, will include subjects on cherries, peaches, apples, and small fruits. H. D. (Don) Hootman, East Lansing, is secretary of the society.

Featured out-of-state speakers and the subjects they will discuss include: Dr. F. A. Gilbert, University of Wisconsin, Sturgeon Bay, "Cherry Culture Studies in the Door Peninsula"; Dr. E. G. Sharville, Purdue University, Lafayette, Ind., brown rot control; Reuben Benz, Yakima, Wash., "Apple Growers' Opportunity"; and W. D. Fitzwater, Jr., U. S. Fish and Wildlife Service, Lafayette, Ind., an evaluation of ground spraying for mouse control. The last topic is a very appropriate one as the build-up of mice in Michigan orchards in 1953 will present a real problem this fall and winter.

The annual banquet is headlined by the noted humorist, Colonel Jack Major, whose topic is "How to Laugh at Taxes." A dance will follow.

The Ladies' Auxiliary is arranging a program.—A. E. Mitchell, East Lansing.

MARYLAND—Extremely dry conditions have continued into mid-October, causing considerable size reduction of later apple varieties. Color has been very good. Some growers fear many trees will not recover from the drought.

Apple exhibits at various county fairs have been of good quality considering growing conditions. Those new spray materials are costly but they have given the Stayman apples a skin we love to see, and cracking has been at a minimum.—A. E. Fierheller, Sec'y, College Park.

VIRGINIA—Most growers report apple size is one-half inch under normal, due to lack of moisture, as compared to one-fourth inch under normal last year. Hence size of state's apple crop continues to shrink. It is now felt Virginia will not produce six million bushels in 1953. (Last year's production was 9.5 million bushels.)—John F. Watson, Sec'y, Staunton.

TENNESSEE—The serious drought has extended to mid-October, and the "end is not yet." Not only has it cut fruit size and yield in bushels but it has also lowered quality seriously by sunburn and poor color. The fact that lack of nitrogen can reduce fruit color as well as too much nitrogen is quite apparent, particularly in West Tennessee orchards. Harvest there is two to three weeks behind that of the same varieties in the mountains of East Tennessee which normally harvest two weeks after

Herbert L. Drake, of Bethel, Kans., secretary of the Kansas State Horticultural Society for the last five years, died October 8, 1953, in a hospital in Kansas City, Kans.

Herb Drake was born in Wyandotte County, Kansas, on the farm where he lived until his death. He was active in Wyandotte County Farm Bureau work and was a past president of that organization. He also was a past president of the Kansas State Horticultural Society and was secretary of the society at the time of his death.

West Tennessee. The few strawberry fields we have seen show mere ribbons of "mother" plants, and some of these are ragged. For the record, the state is not deficient in rainfall to date—we had gobs of rain this spring.

The 48th annual convention of the state

horticultural society on December 10-11 will be headquartered in the Andrew Jackson Hotel, Nashville. Key speakers from several states will take part in the program, the theme of which will be "Planned Plantings," and will include panel discussions on variety changes, a new outlook on marketing methods, and irrigation.

J. H. (Jack) Kenny, Sales Creek, a member of the state horticultural society for over a quarter century, died recently. Mr. Kenny represented Tennessee on the National Peach Council for several terms. He was one of the state's oldest peach growers and kept an active interest in the orchard until his death.—A. N. Pratt, Sec'y, Nashville.

KENTUCKY—If any reader of AMERICAN FRUIT GROWER has any suggestions as to extra winter or spring care of an orchard—apple or peach—that has had no rain between July 1 and October 15, we welcome their recommendations.—W. W. Magill, Sec'y, Lexington.

(Continued on page 12)

FRUIT PEST HANDBOOK

(TWENTY-EIGHTH OF A SERIES)

PEACH RUST

PEACH trees growing in the warmer sections of the United States are attacked every year by a rust fungus that produces conspicuous yellow spots on the upper and numerous brown spore masses on the lower surfaces of the leaves.

In the southeastern portion of the country this rust presumably does not overwinter locally but is carried in each season by wind-borne spores from the semi-tropical regions farther south where the rust is present throughout the year on peach leaves. The time the first infections appear, therefore, varies from the middle of August until late in September, but by late fall it is universally present in Georgia peach orchards. The rust spreads northward through the Carolinas and at times reaches southern Maryland.

Farther west the seasonal distribution follows much the same pattern. It appears first in southern Texas and spreads northward, reaching northwest Arkansas in late September or early October.

East of the Rocky Mountains the rust attacks only the leaves but in California it occasionally overwinters in twig cankers and appears early the following spring, infecting both the leaves and fruit. When the fruit infections are numerous the rust may cause serious losses

(Continued on page 17)

Typical rust infection on peach leaves. Photograph courtesy USDA.



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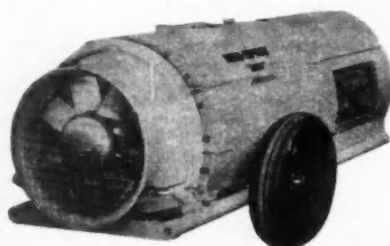
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ADDRESS _____

TOWN _____

STATE _____

STATE NEWS

(Continued from page 11)

WASHINGTON, D. C.—Francis N. Andary, formerly with the USDA, has joined the staff of International Apple Association. Most of Mr. Andary's 16 years in government service were spent as a marketing specialist in the fruit division and previously in the citrus fruit division of the fruit and vegetable branch, PMA, where he handled purchase and export programs for fruits and fruit products. In 1947-48 he worked for Florida Citrus Commission promoting concentrated orange juice.



Francis N. Andary

CONNECTICUT—Speakers for Connecticut Pomological Society annual meeting at Hartford on December 8-9 and topics they will discuss include Dr. R. M. Smock of Cornell, on storage problems; Art Williams, Eastern States Farmers' Exchange, on spraying; Dr. Arthur French, University of Massachusetts, on varieties of tree fruits; and Richard Wellington, Geneva, N. Y., on varieties of other fruits. At the annual dinner on the 8th Prof. Howard A. Rollins will show slides and tell of his experiences in Lebanon while he was on leave from the department of horticulture and serving on the U. S. Point 4 Program.—S. P. Hollister, Sec'y, Storrs.

MASSACHUSETTS—Apple crop is of fine quality and size is good in most areas, in spite of low rainfall. Color is excellent.—A. P. French, Sec'y, Amherst.

MAINE, Oct. 13—Quality crop of McIntosh has been harvested. Most growers are well into harvest of Spy and Red Delicious. Cold nights have put wonderful color on all varieties.

Dr. M. T. Hilborn, associate plant pathologist at Maine Agricultural Experiment Station, has been advanced to plant pathologist. Dr. Hilborn is well known for his work on apple diseases and with hardy stocks.—F. J. McDonald, Sec'y, Monmouth.

Fruit Production at a Glance

	Average 1942-51	1952	USDA Oct. 1, Est. 1953
Thousand Bushels			
Apples	109,224	92,489	97,282
Eastern	46,282	38,790	39,499
Central	19,253	14,922	18,613
Western	43,689	38,777	39,150
Peaches	67,012	62,560	63,094
Cling, Calif.	20,577	19,127	22,543
Free, Calif.	11,380	11,251	10,418
Pears	30,396	30,947	28,901
Tons			
Apricots	225,670	176,800	214,200
Plums	86,550	60,000	92,400
Prunes	296,430	220,800	228,400
Except Calif.	113,830	85,800	88,400
(Dry) Calif.	182,600	135,000	140,000
Grapes	2,874,200	3,173,400	2,770,400
Almonds	35,800	36,400	40,000
Walnuts	70,510	83,800	67,600
Filberts	7,138	12,250	6,380
Pecans	126,518	147,946	181,136
Improved	57,547	74,680	85,761
Wild & Seedling	68,971	73,266	95,375
Barrels			
Cranberries	788,170	790,500	1,162,000

American Fruit Grower WESTERN SECTION



No. 1 Standish fork-lift equipped with brush rake gathers up and sweeps out pruning brush from orchard. This has now been changed to heavy disking of brush to chop it into soil for lower cost and addition of brush to soil.

DON'T BE AFRAID to Stumble

A willingness to try new ideas combined with progressive thinking have led A. N. Standish to top quality pear production in the Santa Clara Valley

By F. HAL HIGGINS

STANDISH has been a pioneering name in America since the days of the Mayflower and has stood for pioneering in the farm industry since 1867 when a pair of Standishes built the first "dirt farming" tractor in California. Today the tradition is being carried on by A. M. Standish at his Los Esteros ranch near Milpitas in the Santa Clara Valley on the southern edge of San Francisco Bay.

With the aid of his two sons-in-law, Hugo Oswald and Raymond McNair, who have both education and initiative, Standish continues to grow the famous pears that in pre-war days hit the top markets of the world at London and Paris.

Much of Standish's pioneering has been done in mechanization of his big 660-acre ranch. He pioneered the use of the platform fork-lift truck in the

orchard to speed up harvest operations. He had found that there were plenty of these trucks in the warehouses and on the paved yards around buildings, but there was nothing adaptable to going out among the trees to bring the fruit to the central loading platform.

The first of his fork-lifts was made from a Dodge army ambulance and was used only to transfer fruit on pallets from field trucks to the big semi-trailers that took it to the cannery.

The next year, they eliminated the field trucks and went right into the orchard with the four-wheel drive and four-wheel-steering fork-lift that Standish had had built.

In using these fork-lifts, they made truck roads along every fourth row of trees. They found that by careful

driving through the orchard, they had practically no broken boxes. Finally last year they put on top springs that enable the operator to apply the hydraulic power to squeeze down the springs and hold the load tightly without slipping to reduce spilling and breaking to the zero mark. Standish says that this breakage was formerly a large item.

The time saved by using these fork-lifts in the orchard is indicated by the fact that last year the Standish operators were taking out a load of 42 boxes, each weighing 60 pounds, every one-and-a-half minutes. They use three loading areas where the semi-trailers back in to pick up loads from the fork-lifts.

As a result of this modern operation, the fruit can be cleaned out of the orchard every night to eliminate weight loss; the number of men needed to get the fruit out is reduced from nine to six; working days are reduced to nine hours; the foreman is given more freedom to watch picking, and the trucking company uses fewer big trucks.

Housing is the second field in which the Standish ranch has pioneered.



Tank truck heads toward pear tree to pour some liquid manure onto its base. Old truck on which tank is mounted handles this job easily and efficiently.

They have done a housing job for both labor and equipment that is worth a second look.

To help anchor the skilled labor at the ranch, seven houses and cabins provide year-around housing, and there is a separate camp area provided for the summer pear picking crew of about 100 men. Here a kitchen, dining room, and sleeping quarters with electric lights and hot water showers are provided for the single men at picking time, while the family men have their own camp with full facilities.

All the ranch equipment is kept under cover the year around and is housed in several different buildings, instead of one, to minimize fire hazard. It is all steam-cleaned several times a season and is painted once a year. This treatment is found to be especially good for sprayers and fertilizer spreaders which are subject to the corrosive action of acids and alkalis.

To maintain the equipment in good running order, the ranch shop is fully equipped with forge, small tools, electric welder, drill press, compressed air paint machine, air grease guns, and an electric steam cleaner.

The water system of the ranch consists of five former artesian wells equipped with turbine pumps. These are connected with 12-inch underground concrete pipe that leads to five 5,000-gallon storage tanks which supply ample water for domestic and sprayer use.

Getting adequate labor to operate his big ranch is of course a problem, but Standish finds that his housing facilities and fair treatment of workers help him hold a steady labor supply. He feels that the large grower has



A. N. Standish pioneered the "portable pruning platform" with this horse-drawn wagon and two mounted ladders. Photo courtesy of the A. N. Standish office.

a definite advantage over the smaller one here, for the more attractive conditions permit him to pay somewhat lower wages.

Most of Standish's pruning is done by contract, the skilled crew coming back year after year and working on a

graduated wage scale so they know what they will earn in a season.

For spraying, the conventional hydraulic sprayer is used on the young pear orchard and the newer speed type sprayer is used on the larger trees. The use of DDT has eliminated the codling moth problem, but the red spider has been gaining in its wake. The number of sprayings has been drastically cut, however, from



Palm-built four-wheel drive for fork-lift is No. 2 in the Standish fork-lift orchard trucks for handling fruit from orchard to the trucks. Photo by A. N. Standish.

the almost continual spraying that was necessary before the war.

Fertilizing at the Standish ranch has been worked out systematically. Liquid manure from the dairy herd which is located on the ranch, is pumped from the cow barns daily for application to the pear orchards.

It is applied by driving a tank truck between the trees and turning on a valve as each tree is passed, so that time is not lost by stopping at each tree. Bulk manure is spread on the orchard each fall.

Before the war the top quality Comic, Anjou, Seckel, Nelis, Hardy, and Bartlett pears from the Standish orchards went to the London, Paris, and top European markets, but Standish says that the future for this European market looks a bit uncertain. He says that only time will tell whether or not they can again compete economically for those markets.

Los Esteros is on a sound basis for pear production with managerial skills blended in two generations to guide it along safe and profitable lines. Its successes in producing quality fruit for the world's markets stamp its products as the very top. Its successes in mechanizing orchard harvest rate the name of Standish in the best Mayflower tradition of daring to conquer new worlds to safeguard future operations.

THE END

WESTERN EDITION AMERICAN FRUIT GROWER



Dr. Quentin B. Zielinski, head of tree fruit variety breeding at OSC experiment station, Corvallis, Ore., shows one of the new peach varieties, yet unnamed.

OSC Peach Day

If you've never attended a peach field day, try it some time. It's particularly good when peaches are ripe—especially if orchards are visited where the fruit is sufficient for all the visitors.

That's the experience growers had when attending the recent annual peach field day at Oregon State College experimental farms at Corvallis. Dr. Quentin B. Zielinski, who is in charge of breeding and testing fruit tree varieties, was also in charge of the field day.

In discussing the newer varieties, Dr. Zielinski stated, "We are working toward an earlier peach, as well as one that will can and freeze more perfectly."

Among the peaches Dr. Zielinski named as "looking very promising for processing" were Jerseyland, Dixigem, Fairhaven, Redhaven, Starking Delicious, and several still bearing numbers.

Premature dropping of fruit, particularly of the Elberta peach, was discussed by C. O. Rawlings, one of the college's best known horticulturists. This dropping has been very serious this year and in some orchards whole crops were lost, he said.

Robert Every, extension entomologist, referred to the peach twig borer as "probably the most important insect pest of peaches." Still the best control for this pest, Every stated, is spraying the trees when they are just past blooming, using basic lead arsenate or cryolite, three pounds to 100 gallons of spray.

Norman Dobbie, of the extension service, discussed peach leaf curl. Suggested sprays were Bordeaux mixture, 12-12-100, or Ferbam, three pounds in 100 gallons. Coverage of every bud was essential, he said. Spraying should be done before winter buds swell.

THE END

NOVEMBER, 1953

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Pacific

NEWS AND VIEWS

Advertising Message

Dr. W. H. Sebrell, Jr., United States Public Health Service reports that obesity is the Number 1 nutritional problem in the United States. Approximately one fourth of adult people are sufficiently overweight to result in appreciable damage to health. Here is a ready made advertising message on the value of fruit for slimming down.

The latest on grading fruit is a report from the USDA on experiments in California. Preliminary results show that relatively large savings in labor currently employed in grading some commodities are possible. The booklet is Marketing Research Report Number 45.

Two deaths have been reported from touching electric lines with aluminum irrigation pipe. In both cases, the pipe was up-ended in an effort to clean an obstruction.

Labor Housing

Chief Ed Hayes of the California State Department of Employment in his yearly report just out tells about continued improvement in farm housing. However, high construction costs are squeezing the small farmer who cannot afford even the minimum of housing for labor.

National apple promotional program is being rapidly expanded. This is the first time in the history of U.S. apple production that all growers have united their efforts to promote apples which is a milestone of tremendous import.

Eugene Kooser and Harvey Brandau, two ex-service pilots who seed the clouds to prevent hail for Medford pear growers, received a vote of confidence from the Jackson County Fruit Growers League. Their story appeared in a recent issue of AMERICAN FRUIT GROWER.

Remember this word for future reference—pharmacognosy. It has to do with the medicinal property of plants and is in the news because a young pharmacist has shown that wine has anti-bacterial properties. Wine grape growers are elated.

Pear Bargaining

Washington pear growers aren't letting any moss grow under their feet after it was learned that California growers by bargaining through their Canning Pear Association got a higher price. A planning committee for the formation of the Washington Canning Pear Association is now hard at work.

A new method for adding color to corrugated paper board fruit and vegetable containers has just been announced by the Schmidt Lithograph Company, San Francisco. The color-coated containers make it possible to brighten up the package. Packages for plums can be plum colored and fibre tomato lugs can be a bright red, for instance.

Washington growers are finding that sprinkler irrigation increases growth of tree which results in poorer color of fruit. It is thought that the reason is better distribution of water under sprinklers which encourage roots to enter areas formerly dry. The new soil area is richer than the area formerly tapped by the root system resulting in better growth.

Harvesters

Both home-made and commercially built mechanical pickup harvesters are being used in the Willamette Valley. Late August rains helped growers prepare the ground for these machines by making clods crumble easily as levelers, rollers and smoothers of various types were put over orchard floors.

Garth and Jim Rear at Eugene, Ore., have developed a new swivel hoe cultivator. Over ninety Lane county strawberry and melon growers have purchased the cultivators which are fitted to the individual farmer's needs.

Julian C. Crane, University of California pomologist, has found that frost damaged apricots grew to maturity after being treated with the hormone 2,4,5-T. However, Crane warns growers not to throw away smudge pots until more research is done. What happens is that the hormone provides a growth stimulating substance normally provided by the frost-killed seed and continued growth resulted.

DuVander-Elersbee

Big news in California fruit circles last year was the DuVander-Elersbee prune ranch where a completely mechanized prune harvest had been worked out. More work was to be done this fall but the trees had no prunes. Jack Frost had beat out the mechanical harvester.

The Agtron is a new electronic unit that grades tomatoes by color. The meter scale is divided into bands labeled well colored, fairly well colored, and below color. Next step is adapting these units to fruit. One hundred fifty are now in use in California tomato grading.

The new "tip up" type of construction, in which walls of reinforced concrete are poured into forms on the ground and hoisted into place by giant cranes is being used in building the new 75,000-box apple storage for Wells and Wade Fruit Co. at Azwell, Wash. This is the first building to be so constructed in northern Chelan County, although the fruit company is erecting a building of similar construction at Wenatchee.

Fruit Imports

We import apples from Canada, pears from Argentina, berries from Canada and Mexico, grapes from South Africa and Canada, brined cherries from Italy and dried figs and dates from the Mediterranean and middle-eastern countries. On only two of these, tree nuts and figs, has government action been taken to retard the import flow.

STONY PIT VIRUS



These pitted, distorted pears show results of stony pit virus that last year took a heavy toll of Oregon's Bosc pear production with an estimated 15 per cent loss in the Medford pear belt. Healthy pear at left is shown for comparison. A research grant has been made available by the Jackson County Fruit Growers League to Oregon State College Agricultural Experiment Station to combat the disease. The grant will be handled through the recently established research and scholarship foundation of the Oregon State Horticultural Society. The project will be co-ordinated with research being conducted by Dr. J. R. Kienholz, USDA plant pathologist at the Mid-Columbia Experiment Station, Hood River, where stony pit has been earmarked the number one virus study.

BE SURE TO ATTEND YOUR STATE FRUIT MEETING

Here are the Oregon and Washington horticultural society programs — chock-full of timely topics by prominent state and national fruit specialists

Program of OREGON STATE HORTICULTURAL SOCIETY 68th ANNUAL MEETING DECEMBER 3-4, at CORVALLIS

Ross Hukari, Program Chairman, Hood River

C. O. Rawlings, Secretary, Corvallis

THURSDAY, December 3 Morning Session

Question Box.

Sales Promotion—Nick Trebin, Promotion Sales Manager, Apple Growers Association.

Production Credit and Finance—Ernest K. Henry, President, Spokane Production Credit Corporation.

Remarks—Dr. A. L. Strand, President, Oregon State College.

Concentrate Sprays—James Marshall, Entomological Service, Summerland, B.C.

FRIDAY, December 4 Morning Session

Question Box.

Economic Outlook—Burton K. Woods, Head, Department of Agricultural Economics, Oregon State College.

Marketing—Dr. Max W. Brunk, Cornell University, Ithaca, N.Y.

Eastern Spray Programs—Arthur E. Mitchell, Michigan State College, East Lansing.

Business Meeting.

Afternoon Sessions THURSDAY and FRIDAY December 3-4

Discussion on Technical Problems and New Developments in—Apples and Pears . . . Vegetables . . . Small Fruits . . . Stone Fruits.

(Separate Section for Each).

THURSDAY EVENING December 3

Banquet—Nick Trebin, Toastmaster.

Program of WASHINGTON STATE HORTICULTURAL ASSOCIATION 49th ANNUAL MEETING DECEMBER 7-9, at WENATCHEE

Grady Auvil, President, Orondo

John C. Snyder, Secretary, Pullman

MONDAY, December 7

Forenoon Grady Auvil

9:30 Address of Welcome—Grady Auvil.

9:40 Greetings.

9:45 Apple Scab and Powdery Mildew Control in North Central Washington—Roderick Sprague, Tree Fruit Experiment Station, Wenatchee.

10:10 Apple Scab and Mildew Control in Southwest Washington—Jess Kienholz, Oregon Experiment Station, Hood River.

10:25 Apple and Pear Insect Control—W. J. O'Neill, Tree Fruit Experiment Station, Wenatchee.

11:05 A Practical Evaluation of Mechanical and Airblast Sprayers Used in Eastern Orchards—Arthur E. Mitchell, Michigan State College, East Lansing.

Afternoon

T. A. Merrill, Chairman

1:30 Question box dealing with apple and pear insects—Doyle B. Starcher, Leader.

2:00 Some New Developments in Vegetative Propagation of Woody Plants—Shirl O. Graham and Earle C. Blodgett, Irrigation Experiment Station, Prosser.

2:10 Your Extension Service—R. B. Tootell, Director Extension Service, Pullman.

2:35 Report of Apple Juice Concentrate committee—Reuben G. Benz, Yakima.

2:45 There is No Substitute for Soil Fertility—Thomas L. Martin, Brigham Young University, Provo, Utah.

3:25 Nutrient Sprays for Fruit Trees—Nels Benson, Tree Fruit Experiment Station, Wenatchee.

3:45 Pear Blossom Blast Control in Southwest Washington—D. F. All-

mendinger, Folke Johnson, Vernon L. Miller, Western Washington Experiment Station, Puyallup.

TUESDAY, December 8

Forenoon

Elon J. Gilbert, Chairman

9:00 Question box dealing with soil management, cover crops, nutrient sprays, and minor elements—W. A. Luce, Leader.

9:15 Grade and Pack Panel—A. C. Rich, Yakima, in Charge.

9:45 Business meeting.

10:00 Marketing Panel—Noel Bakke, Grin, White & Prince, in Charge.

11:45 Fruit-O-Matic—J. C. de Graaf, Fruit-O-Matic Mfg. Co., Los Angeles, Calif.

Afternoon

Stanley Dwinell, Chairman

1:30 Question box dealing with marketing, advertising, grading, harvesting, maturity, storage—A. Van Doren, Leader.

2:00 Apple Marketing—Max Brunk, Cornell Univ., Ithaca, N.Y.

2:30 Apple Marketing—Earl Carlsen, Fruit Industries Research Foundation, Yakima.

3:00 The Retailer Rates Your Apples at 1.2%—Harold Copple, Washington State Apple Commission, Wenatchee.

3:30 National Apple Promotion—Sound film "Gateway to Health," introduction by Reuben G. Benz, Yakima.

4:00 Mechanical Orchard Hoists—C. H. Zuroske, Washington Agricultural Experiment Station, Pullman. Economics of Controlled Atmosphere Storage for Washington Apples—J. E. Lowden and C. H. Zuroske, Washington Agricultural Experiment Station, Pullman (to be read by title).

WEDNESDAY, December 9

Forenoon

Chas. F. Morrison, Chairman

9:00 Question box dealing with soft fruit—T. R. Wright, Leader.

9:30 Paper Chromatography: A Laboratory Test for Virus Disease—Theodore C. Diener and Earle C. Blodgett (to be read by title).

9:30 Systemics—E. W. Anthon, Tree Fruit Experiment Station, Wenatchee.

9:45 Stone Fruit Varieties—H. W. Fogle, Irrigation Experiment Station, Prosser.

10:00 Organization for Self Preservation—Jack Anderson, San Juan Bautista, Calif.

10:45 Washington Fruit Commission—Fred Westberg.

11:15 Observations of Phytophthora Rot of Fruits in Wenatchee, Yakima, and Hood River Districts—W. A. Luce, et al.

11:35 The 1953 Survey for Western X-Little Cherry and Western X Disease—Earle C. Blodgett and James A. Twomey, Irrigation Experiment Station, Prosser.

11:50 Business meeting.

Afternoon

Grady Auvil, Chairman

1:30 Question box—L. P. Batjer, Leader.

2:00 Bee Poisoning and Pollination Panel—R. C. Bartram, Leader.

2:30 Business meeting.

2:40 Spray thinning—L. P. Batjer, BPI-SAE, Wenatchee.

My Experiences and Plans for Future Spray Thinning—Ross and Bruce Heminger, Wenatchee; Irving W. Woods, Omak; Francis C. Crane, Brewster; Marvin Sundquist, Yakima.

BOOKS FOR YOUR ORCHARD LIBRARY

FRUIT SCIENCE

By Norman F. Childers

A fruit grower's bible by a leader in the industry. Fruit growing from A to Z. Profusely illustrated. An excellent reference book for all fruit growers. \$6.00

DESTRUCTIVE AND USEFUL INSECTS

By Metcalf, Flint and Metcalf

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PLANT DISEASE HANDBOOK

By Cynthia Westcott

Includes identification, prevention, and control of diseases of tree and bush fruits as well as other plants. 746 pages, illustrated. \$8.50

PESTICIDE HANDBOOK

By Donald E. H. Frear

Lists trade names, active ingredients, uses, and manufacturers of orchard chemicals and pesticide equipment sold in the U.S. and Canada. An indispensable reference for all fruit growers. \$1.25

REGISTER OF NEW FRUIT AND NUT VARIETIES, 1920-1950

By Reid M. Brooks and H. P. Oimo

Briefly describes 1,106 varieties originating in North America and introduced commercially during the last 30 years. Variety name with synonyms, originator's name and address, date of commercial introduction, plant patent number, parentage, and most valuable characteristics of the variety are included. 206 pages. \$3.00

DWARF FRUIT TREES

By Lawrence Southwick

A complete description of the selection, planting and cultivation of dwarf fruit trees. \$2.50

HOW TO MAKE A LIVING IN THE COUNTRY

By Fred Tyler

Ninety-six pages of ideas for making a living in the country. The eight pages on roadside marketing are worth the price of the book. \$1.00

THE PRUNING BOOK

By Gustave L. Wiffock

A well-illustrated and easy-to-follow guide for pruning fruit trees and ornamentals. 172 pages, illustrated. \$3.00

WESTERN FRUIT GARDENING

By Reid M. Brooks and Claron O. Hesse

A handbook for the home gardener on fruit varieties; climatic adaptations; soil, water, and nutrient requirements; pruning and propagation; control of diseases and pests. \$4.50

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AMERICAN FRUIT GROWER
Willoughby, Ohio



A. S. Howe, Silverton, Ore., is shown in the driver's seat of the strawberry runner cutter and cultivator which he invented to cut rising costs and increase yields.

Cut Costs Increase Yields

Necessity spurs invention of mechanical cutter to lop off strawberry runners

THERE were three reasons why A. S. Howe of Silverton, Ore., invented a strawberry runner cutter and cultivator. One reason was that it is difficult to obtain sufficient help to hoe strawberries since hoeing must be done before school is out for the summer.

Another reason was that if sufficient strawberry hoers, toppers, and thinners are obtained cost of the hand work is so high that much of the strawberry profit is gone. The third reason was that by removing runners and spacing his plants, he increases available water supply for the remaining plants which in turn increases yields.

When this machine was shown at a farm demonstration, hundreds of interested strawberry growers attended the event.

The machine will remove the runners, cut off the tops, and cultivate a narrow band on both sides of a row of berries. Two motions are involved in removing the runners: 1) Two rotary fingers or reels pass through the row and pull out runners to the edges of the row, and 2) the runners are cut off by a pair of circular saws that parallel the row. The runner cutter is built so that it can be used on hillside plantings, as there are hundreds of acres of strawberries in

the Silverton area planted on hillsides.

Use of the machine has practically eliminated hand hoeing in Howe's strawberry fields. His strawberry plantings have averaged 25 acres per year with yields of three to four tons per acre. Howe, his wife, and one hired man have done practically all the work, except picking, since he invented the machine. — Harold and Lillie Larsen.

EARL CARLSEN FORMS RESEARCH FOUNDATION

EARL CARLSEN, formerly director of research for the Washington State Apple Commission, is now in a position to take on fruit research problems on a national scale with the formation of the Fruit Industries Research Foundation, of which he is director.

Carlson's new organization has been appointed research agent for the Washington State Apple Commission and will do market research, equipment development, and fruit handling and consulting work for other segments and commercial units of the fruit industry. The address of Fruit Industries Research Foundation is 104½ W. Yakima Ave., Yakima, Wash.

Dusting with Streptomycin for Fire Blight Control

California tests gave good control of blight and no russetting of pears

IN California, tests with bentonite dust impregnated with crude streptomycin gave excellent control of fire blight on pears during the spring of 1953. Not only was blight controlled, but the streptomycin-dusted fruits showed practically no russetting as often occurs when conventional copper-containing materials are used during bloom.

The experimental work was under the direction of Dr. Peter A. Ark, plant pathologist, University of California, Berkeley. The dust was mixed to contain 240 parts per million of streptomycin and applied to 320 Bartlett pear trees with a powerful duster having an air-replacement rating of 80,000 cubic feet per minute. The rate was a little more than 30 pounds of dust per acre. Another 300 trees were given the conventional treatment of 20 per cent copper sulfate in lime dust. For checks, 550 trees were left untreated.

Determining Severity of Infection

The severity of blight incidence was determined by the number of cuts necessary to remove blighted parts of trees. Up to May 1 only two cuts were made on the streptomycin treated trees, the same as was made on the 20-80 copper dust trees. On the check trees 135 cuts were made to remove blighted parts. From May 1 to June 1, 1,182 cuts were made on the streptomycin-dusted trees, 30 on the copper-dusted trees, and 7,000 on the check trees.

A partial explanation of the increase in the number of cuts on the

streptomycin-dusted trees over the copper-dusted ones lies in the fact that only four applications were made with the streptomycin while eight copper dusts were applied. At certain critical times trees were not adequately protected. Nevertheless, by June 1 the streptomycin dust had still given 83.8 per cent control of fire blight, and no russeted fruit.

Timing of Applications

The dust applications were made on March 23 and 30 and April 9 and 20. Applications are timed according to bloom stage, atmospheric humidity, and rainfall. For example, when atmospheric humidity rises, the sugar in the pear blossom nectar becomes more dilute and is more susceptible to the growth of fire blight bacteria. Such a condition makes dusting during the blossom period highly important in blight control.

In seasons like 1953 when the blossom season was prolonged, fire blight hazards are heightened. A highly susceptible blight period existed from March 20 to May 1 in California, due to a long blossom period and daily rains from March 26 to April 30. Had eight applications of streptomycin been made, as was done with copper, the results might have been even better than copper in controlling the blight.

More extensive trials next season under various climatic conditions will help confirm or change present information on control of fire blight in California with streptomycin.

EIGHT TONS OF BERRIES PER ACRE



Strawberry king
Carl E. Pierson.

OREGON'S strawberry king for 1953, Carl E. Pierson, attributes his ability to produce 39-plustons from his five-acre field at Hillsboro to proper soil preparation and irrigation.

"In 1950," says Pierson, "I took off the five acres my fifth straight crop of canning peas. Then I planted the acreage to Sudan grass. In September I turned under a green manure crop.

"Early next spring I planted certified Marshall plants, setting the plants in check rows with 42-inch centers.

After planting I sidedressed with 500 pounds of 16-20 fertilizer to the acre."

When the first crop was harvested Pierson fertilized with 200 pounds of calcium nitrate to the acre, applied through irrigation in September, and a spring application of 60 pounds of potash per acre.

As soon as harvest is over, Pierson clips his plants and lets them remain dormant until late August when he starts them growing to produce next year's big crop. First irrigation in 1952, after harvest, was about August 20. About September 10 he followed with a two-inch irrigation, with nitrate, and being a dry year, a third was given on October 1.

Olallie Blackberry

OUTYIELDED BOYSEN 2½ TO 1

In tests in Riverside County, the office of the Farm Advisor (County Agent) reported a yield of Olallies 2½ times as large as Boydens. In Orange County Olallie yielded 15 tons per acre, with demand stronger than the supply. A grower in Santa Barbara told us in the midst of his harvest that he thought he would make more on his 200 Olallies than on his 500 Boydens.

Olallie is 10 days to 2 weeks earlier than Boysen, has a long season, is resistant to verticillium wilt and sunscald, stands more cold than Boysen, Kayberry, etc., and has withstood adverse soil conditions far better than Boydens, raspberries, strawberries, pole peas, etc. Berries are easy to pick, are firmer and better keepers than Boydens, well adapted to freezing and canning, good fresh, and in pies, cobbles, jam and jelly.

A Seattle customer wrote: "Your Olallie berry is the finest blackberry I have ever grown, and on account of its habits I thoroughly enjoy picking them."

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VACUUM COOLING

A relative newcomer, vacuum or dry cooling is being widely used to precool leafy vegetables. The author explains why the method is not adaptable to fruits

By W. T. PENTZER
U. S. Department of Agriculture

VACUUM cooling of lettuce was started on a commercial scale in 1948 in Salinas, Calif. In that season 34 carloads were cooled by this method. A total of 651 carloads was cooled in 1949, 2,300 in 1950, 4,600 in 1951, and 9,300 in 1952. It is estimated that 25 to 30 per cent of the 1953 crop of California and Arizona lettuce, or a total of more than 15,000 carloads, will be vacuum-cooled.

The method is simple in principle, relying upon rapid evaporation of water from the commodity to cool it. The problem is to make the water evaporate at a temperature low enough to cool the lettuce to 32° to 34°F. This is accomplished by subjecting the packaged lettuce to a high vacuum.

Water boils at approximately 32°F. under a vacuum equal to 29.74 inches of mercury when atmospheric pressure is 29.92 inches of mercury. The necessary high vacuum is produced in steel vacuum chambers with steam ejectors or high capacity vacuum pumps.

For every pound of water evaporated at 32°F., about 1,076 B.t.u. of heat will be extracted. To cool 100 pounds of lettuce 30°, say from 65°F. to 35°F., would require the removal of about 2.6 pounds of water.

Vegetables Cool Quickly

Early tests of commercial vacuum cooling of lettuce revealed that the heads were cooled to the center and in all parts of the packed crates to temperatures of 32° to 36°F. in 30 to 50 minutes. Objectionable wilting has not been a factor.

Vacuum cooling has provided a means of cooling dry-packed lettuce quickly and thoroughly, thus extending the distribution of dry-packed lettuce to markets formerly reached only with ice-packed lettuce.

Vacuum cooling costs about 25 cents per crate and field packing and vacuum cooling result in a saving of about 35 cents per crate over packing lettuce with ice. The use of fiberboard cartons in place of wooden crates, which is made practical by vacuum cooling, is estimated to save another 30 cents.

After vacuum cooling the crates or cartons are loaded without top ice in pre-iced refrigerator cars equipped

with fans. A small amount of salt is added to the ice in the bunkers.

It is difficult to keep up with the expansion of vacuum cooling in the western lettuce industry. The Vacuum Cooling Company of Salinas and San Francisco, Calif., which started the practice, has seven plants. These plants employ high-pressure steam ejectors and barometric condensers to create and maintain the vacuum.

The Gay Engineering Company of Los Angeles has worked with local cold storage and ice manufacturing plants in building vacuum coolers that use electrically powered vacuum pumps and refrigerated condensers.

Fruits Cool Slowly

Vacuum cooling has not had much commercial application for fruits and vegetables other than for lettuce. An installation has been made in the New York City market area for cooling prepackaged vegetables before distribution to retail stores. Commercial trials with strawberries have been made in California with fairly good success.

Experimental evidence indicates that this method of cooling is applicable to fruits and vegetables that lose moisture easily, those that have a large surface area in proportion to volume and are not protected against moisture loss by a thick waxy skin.

Leafy vegetables such as lettuce, broccoli, spinach, parsley, escarole, endive, cabbage, and Brussels sprouts cooled quickly in the experiments. Corn on the cob, asparagus, leek, mushrooms, celery, and cauliflower were also cooled quickly by the vacuum method.

Oranges, apples, potatoes, tomatoes, and grapes, which have a fairly small surface in respect to volume and most of which have waxy skins, cooled slowly, and apples were injured by pitting of the skin area from moisture loss. Strawberries were intermediate in cooling.

The original cost of a vacuum-cooling plant of 12- to 15-carload capacity per day is considerable, and a long season of high output is required to justify this investment. Some consideration has been given to assembling portable vacuum coolers for perishables that are shipped during short seasons. If this is accomplished, an extension of vacuum cooling to other commodities and areas can be expected.

THE END

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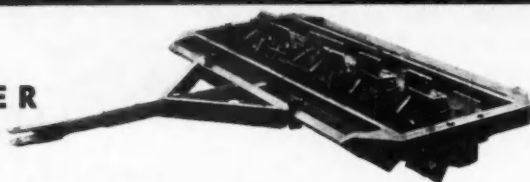
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WASHINGTON FRUIT LETTER

By **LARSTON D. FARRAR**
Washington Correspondent
American Fruit Grower

THE big news here is that Secretary of Agriculture Ezra Taft Benson has put into effect a complete reorganization of the activities of his agency.

This is the first time that a major job of reorganization of the USDA has been undertaken since 1933, when the department began its growth from a few hundred employees into a far-flung agency.

Republicans and Democrats alike had said, when authority to reorganize the department was granted last spring, that a thorough overhaul of the sprawling agency was long overdue.

There will be more efficiency in all phases of USDA work, trained observers here believe. That is, in research, in marketing and production administration, and in such related lines of activity as the vast market news setup.

HORTICULTURAL groups soon will be hearing again—in person—from Fred A. Motz, the foreign fruit specialist of the USDA, who has returned home after a first-hand study of conditions in the United Kingdom, France, Germany, the Low Countries, Scandinavia, Spain, Italy, and Portugal. "Doc" Motz, as he is known to growers, has been stationed in Paris for some time, from whence he made forays into the fruit growing areas of Europe.

THE U.S. Bureau of the Census has estimated that households are increasing in this nation at the rate of 950,000 a year, with the rate slated to go higher, due to the expanding population. This accents again the fact that the U.S. must produce more merely to feed and clothe the people of our own nation.

For the short run, the Federal Reserve Board has released its latest Survey of Consumer Finances, which shows that the average consumer has had an increase in net worth of from \$500 to \$1,000 during the past three years. More than half of all U.S. families now have assets worth more than their debts, and a large group has a net worth of at least \$5,000. Only 10 per cent has a net worth of more than \$25,000. Even so, 10 per cent of all U.S. families means some 4.5 million families. This lush market can afford fruits of the best quality, if its members are sold on the idea of buying such fruit.

THE END

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STANDARD CONVEYOR COMPANY
North St. Paul 9, Minnesota



NOVEMBER, 1953

TWO FRUIT LEADERS PASS AWAY

PORTER R. TAYLOR, an outstanding leader in fruit and vegetable marketing, died after a brief illness on September 24. Fruit growers will miss his penetrating analyses of marketing problems and his forecasts of coming conditions.

Mr. Taylor was a firm believer in marketing agreements as a means to strengthen the growers' position against violent fluctuations in prices. He had been director of the fruit and vegetable department of American Farm Bureau Federation since 1945.

Prior to that time, he was with the Pennsylvania State Agricultural Department, the Federal Farm Board, and the USDA. Son of Dr. William A. Taylor, former chief of the Bureau of Plant Industry, he was a graduate of Michigan State College.

Roy E. Gibson

A pioneer in the development of the nursery industry and better nursery stock for fruit growers, Roy E. Gibson passed away at South Haven, Mich., recently. He was director of research for the Greening Nursery Company, having started as a nursery salesman when a boy, following in his father's footsteps.

Roy soon noticed there was quite a difference in trees of the same variety and his early work led to more careful bud selection so that growers had more assurance of getting trees true-to-name and free from disease. He introduced several new fruit varieties, best known of which is the South Haven peach.

LEAF ANALYSIS

(Continued from page 10)

Santa Clara County (California) fruit growers. Several consulting laboratories are becoming interested in providing leaf analyses to their clients.

The Leaf Analysis Service, as established at Michigan State College, is perhaps the first such service to offer a complete analysis of the leaves coupled with a report to the grower on the nutrient-element balance of his orchard. Also, it is the first of such services to be offered to fruit growers by the experiment station and extension service. While association with a state or federal agency is desirable, it is not absolutely necessary. There is no real obstacle to securing services from a commercial spectrographic laboratory, although prices are higher. The final outcome promises to be a National Leaf Analysis Service for Fruit Growers. **THE END**

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ANTIBIOTICS

(Continued from page 7)

contained methyl cellosolve and Carbomax 4,000, each at one per cent concentration. These materials were used as penetrants, their function being to facilitate the entry of the antibiotics into the plant cells.

A group of 112 bearing Jonathan apple trees was selected for these field tests, in an orchard that had severe blight infestations during the previous six years. Although fire blight was not generally as severe as it had previously been, only one out of the 42 untreated control trees did not show some blight infections.

The first antibiotic spray was put on at the balloon stage (April 22). Additional sprays were applied at 30 to 50 per cent of full bloom (April 27), early petal fall (April 30), and at calyx (May 4). Three cover sprays were applied on May 9, 14, and 21.

In order to determine the critical period for the application of the first spray, the test trees were divided into four groups. Each group received the initial spray at a different stage of floral development: balloon, 30 to 50 per cent of full bloom, early petal fall, and calyx. All groups received the three cover sprays. Thus there were trees that had as many as seven and as few as four sprays.

Several striking results were obtained from these field experiments. Fire blight control was complete, regardless of antibiotic concentration, where the spray schedule was initiated at either the balloon stage or at 30 to 50 per cent of full bloom. Of significance also was the fact that these trees remained free of blight infections throughout the remainder of the growing season. Where the spray schedule was started at early petal fall or at calyx some blossom blight developed. Although blossom blight developed in these trees, the spread of fire blight to the shoots was limited to 10 per cent of that present in the untreated control trees.

From these experiments it appears that antibiotics at rather low concentrations are able to control fire blight effectively. It is also apparent that late bloom sprays markedly reduced shoot infections, suggesting that antibiotics may have some eradication properties.

Bloom Sprays Important

The number of sprays necessary to obtain satisfactory control of fire blight is not yet known. This will undoubtedly depend upon the length of the bloom period, which is strongly influenced by climatic conditions. It is apparent that the bloom sprays are extremely important. The relative im-



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portance of the cover sprays has not been determined by the current investigation. If blight infections can be prevented during the bloom period, it seems highly probable that post bloom sprays will not be required.

The number of sprays necessary to obtain control will also depend upon the length of time that the antibiotic remains potent or active in the plant tissue. From our field tests it appears that sprays applied at three to four day intervals during the bloom could provide excellent control. However, the exact time interval between spray applications was not established by the work done this year. Future experiments should provide the information to tell us when and how often antibiotics should be applied.

Promising results with antibiotics for the control of fire blight and other bacterial diseases have been reported from several sections of the country this year. Winter and Young at Ohio reported excellent control of fire blight in apples with streptomycin sprays. In California, Ark has been able to obtain good control of fire blight in pears with streptomycin dusts. Control of some other bacterial diseases of horticultural crops has been reported by Mitchell and Zau-meyer of the USDA. THE END

PEACH RUST

(Continued from page 11)

to growers of canning peaches, because the fruit cannot be properly peeled around the rust spots.

The spores produced on the leaves and twig cankers when they occur are windborne and readily infect other peach leaves so that by late fall from 80 to 90 per cent of the leaves show rust spots.

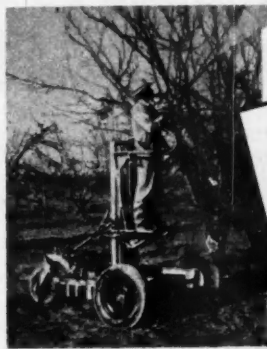
In spite of the very extensive development on almost every tree, many fruit growers do not realize that the rust exists, and in the Southeast, at least, the rust causes no concern. Nevertheless, the rust can cause widespread premature defoliation that varies in severity from year to year. If the infections develop late in August the trees may be defoliated by the end of September, whereas if the rust does not appear until late in September, the defoliation occurs approximately at the time of normal leaf fall.

Since the rust is so universally present, it has been impossible to measure the true effect of this premature defoliation. It is considered, however, that instead of being a minor problem, peach rust is an important factor in the winter-injury problem.

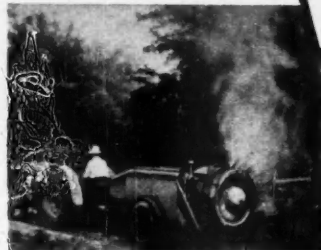
Peach trees affected by this excessive defoliation have been known to bloom and start new shoot growth in the late fall and, it is presumed, enter the dormant period in a weakened condition. It is known that peach trees in the southern states are frequently injured by sudden changes in temperature, and weakened trees are much more likely to be injured than vigorous ones.

Control. Experiments in California have shown that the rust can be controlled by use of sulfur sprays, and preliminary work in Georgia has shown that sulfur dust is also effective. However, until more definite information is available on the effect of the premature defoliation, the value of a spray program in the East is questionable and spraying or dusting is not recommended.—John C. Dunegan, USDA.

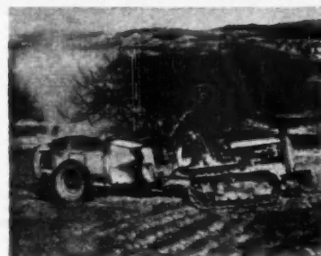
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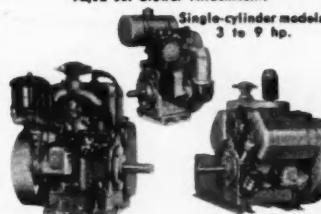
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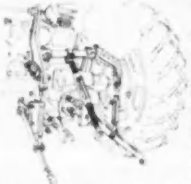
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From where I sit ... *by* Joe Marsh

It's the Principal of the Thing!

Every autumn our High School has a contest to see who can get the most ads for *The Recorder*—the school magazine. The winner becomes honorary Principal for a day.

Skip Roberts won last week, and his first (and only) official act as "Principal" of the school was to announce in a loud, clear voice: "I hereby declare today a school holiday!"

Knowing Miss Gilbert, the real principal, it was no surprise to me that she laughed as hard as anybody else . . . and said to go right ahead.

From where I sit, it's no wonder our youngsters think Miss Gilbert's such a wonderful person (even though they know they'll have to make up that day). Her tolerance, her friendly way with people of all ages reflect in everything she does. For instance, at my house Miss Gilbert prefers tea but always respects my preference for a glass of beer. As a *real* person . . . in any community, Miss Gilbert belongs at "the head of the class."

Joe Marsh

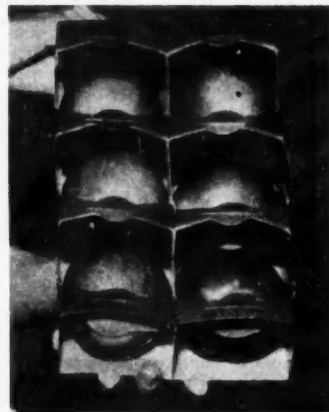
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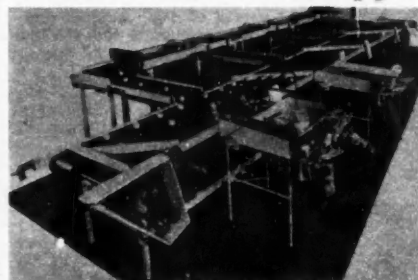


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Many eastern growers are using the new Fanci-Pak. Made of heavy duty paperboard, each cell holds the fruit firmly in place. The packages are then placed vertically in a master shipping container. Originally designed for apples, the Fanci-Pak is being used successfully for other fruits. Write Bill Martin, Alford Cartons, Ridgefield Park, N. J.

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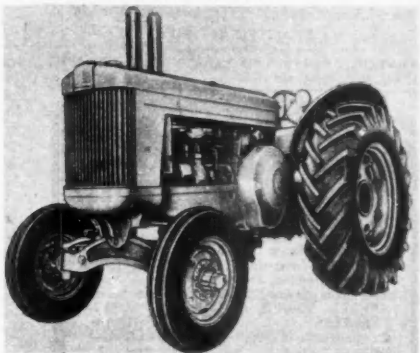
The Autobagger grades, cleans, and bags fruit in one operation. It has two heads, each of which can handle up to 300 bags per hour. The Autobagger is re-

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sonably priced. Why not write Red Kiefer, The Trescott Co., Inc., Dept. A, Fairport, N. Y.?

Orchard Model

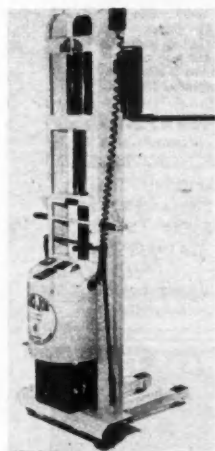


We recently saw the new Deere orchard tractor in action. Steering has been greatly improved through use of new front axles and a front wheel knuckle arrangement. The tractor is designed for comfort, too, with a deep cushioned seat and adjustable back rest. Why not write G. F. Neiley, Deere & Company, Dept. C42, Moline, Ill.?

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TUALATIN VALLEY NURSERIES

AMERICAN FRUIT GROWER

The Orchard Home

THERE are many, many different ways to use your apples and grapes during these late fall months, and below are recipes to give you some ideas. Fill your most-always-empty cookie jar full of the applesauce cookies and your jelly jars with the grape conserve. Be sure, too, to tempt your family and friends with the pie, cake, and other dessert recipes.

APPLESAUCE COOKIES

- ½ cup shortening
- ½ teaspoon salt
- 1 cup sugar
- 1 egg
- 1½ cup thick applesauce
- 2½ cup sifted flour
- 1 teaspoon soda
- ½ cup chopped nut meats
- ½ teaspoon each nutmeg and cinnamon

Blend shortening, salt, soda, and spices, sugar and egg together. Add applesauce and dry ingredients. Drop by spoonfuls and bake at 350° F. about 15 minutes. Makes 3 dozen cookies.—Mrs. Harley B. Clark, Carthage, Mo.

GRAPE JUICE

Cover desired amount of Concord grapes with cold water and boil until tender. Turn into jelly bag and let juice drip. It is best not to squeeze them for juice will not be clear. Add 2 cups sugar to every 3 quarts juice and place over fire just long enough to come to a boil. Bottle and cap while hot.—Mrs. Curtis Link, Columbus 4, Ohio.

GERMAN APPLE CAKE

- 2 cups flour
- 3 teaspoons baking powder
- ½ teaspoon salt
- 3 tablespoons shortening
- 1 egg (beaten)
- ¾ cup milk
- 4 apples, sliced and cored
- 2 tablespoons sugar
- Cinnamon

Mix and sift dry ingredients. Work in shortening with tips of fingers. Add milk and beaten egg, and mix quickly with a fork. Dough must be soft enough to spread in a shallow cake pan. Press apples into dough. Sprinkle with sugar and cinnamon. Bake in hot oven, 400° F., ½ hour. Serve hot with favorite sauce, lemon sauce, or whipped cream.—Mrs. Ken Tryan, Escanaba, Mich.

APPLE BUTTER

- 1 peck apples
- 2 quarts boiled cider
- 1 ounce stick cinnamon
- 1½ pounds sugar
- 1 teaspoon salt

Core, pare, and quarter apples. Add cider and cinnamon and bring to boiling point. Place in a moderate oven, 350° F., and process for 4 hours in an open pan. Then add sugar and salt and stir until thoroughly dissolved. Put into hot jars. Partly seal and return to oven for 30 minutes. Remove and complete sealing.—Mrs. Fay Waken, La Crosse, Wis.

GRAPE PIE

- 3 cups grapes
- 1 cup sugar
- 3 tablespoons flour
- ½ teaspoon salt
- ½ teaspoon grated lemon peel

Slip skins from grapes and set aside. Heat pulp to boiling and press through sieve to remove seeds. Sift together sugar, flour, and salt, and mix with skins and pulp. Add lemon peel. Pour into a pastry lined 9-inch pie shell. Dot with butter. Place a lattice or plain crust on top. Bake at 450° F. for 10 minutes, then reduce heat

to 350° F. and bake 20 minutes longer.—Mrs. C. A. Umosella, Hammonton, N. J.

BUTTERSCOTCH APPLE PIE

Line a deep pie plate with pastry and sprinkle on it 4 tablespoons brown sugar. Fill pie plate with sliced apples. Cream together following ingredients:

- 3 tablespoons butter
- 3 tablespoons brown sugar
- 3 tablespoons flour

Spread mixture on sliced apples. Pour 1 cup milk over apples. Bake in hot oven 425° to 450° F. for 15 minutes. Reduce heat to 350° F. and bake 20 to 30 minutes longer, or until apples are tender. Serve with a swirl of whipped cream.

APPLE CHEESE CRISP

- 6 cups apples, sliced
- ½ teaspoon cinnamon
- ½ teaspoon nutmeg
- 1 tablespoon lemon juice
- ½ cup white corn syrup
- ½ cup sugar
- ½ cup sifted flour
- ¼ teaspoon salt
- ½ cup butter or margarine
- 1 cup grated cheese

Pare and slice apples. Arrange in greased baking dish. Sprinkle with spices. Pour lemon juice and corn syrup over apples. Combine sugar, flour, and salt. Cut in butter until mixture resembles coarse crumbs. Stir in grated cheese lightly and then top apples with this mixture. Bake in moderate oven (350° F.) until apples are tender, about 1 hour. Serve warm with or without cream.—Edith Vogtman, N. Haledon, N.J.

GRAPE CONSERVE

- 1 cup grapes
- ¾ cup sugar
- ½ cup ground nuts
- Juice 1 lemon

Separate pulp from skins. Boil pulp until seeds are loosened. Add pulp to skins. Add sugar, nuts, and lemon juice. Boil until skins are tender. Seal in hot jars.—Mrs. J. W. Gibson, Millington, N.J.

BAKED APPLE SNOW

To 1 cup thick, unsweetened applesauce which has been sieved, add ¼ cup granulated sugar, juice of ½ lemon and ¼ teaspoon grated lemon rind. Beat 3 egg whites, to which pinch of salt has been added, until stiff. Fold in applesauce mixture. Pour into buttered molds set in pan of hot water and bake in slow oven, 350°, about 45 minutes. Serve cold with plain or whipped cream.—Mrs. Mildred Kelso, Bigfork, Mont.

APPLE BREAD

- 4 chopped apples, or 3 cups
- 2 cups corn meal
- ½ cup flour
- 1 cup sugar
- 1 teaspoon lemon extract
- 1 egg
- 1 teaspoon baking powder

Pour sugar on apples and let stand for 30 minutes. Then stir in corn meal, flour, egg, and flavoring. Bake 30 minutes in a moderate oven.—Mrs. Sam Mitchell, New Meadows, Idaho.



AMAZING NEW DWARF PEACH TREE

From the Chinese War Zone comes an amazing Dwarf Peach Tree. Each tree yields yearly up to 200 delicious, white-fleshed, free-stone peaches. Prolific with beautiful double red flowers. Never grows over 5 ft. tall... very hardy, lives in any climate. Now is planting time. Only \$3.00 each; 3 for \$7.50; 10 for \$22.50, ppd. tax incl. Satisfaction guaranteed. Send for free catalog of other Dwarf Trees.

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• Fruit for Health •

The Holy Earth

THE FIRST CHILL of fall air and the first whiff of wood smoke from the fireplace can be counted on to bring on that reflective mood. Just over the desk is a shelf of books. Every desk needs a shelf of books. And this evening sees an old favorite, Liberty Hyde Bailey's *Holy Earth* come down from among the rest for another perusal.

What a book it is! In fact "what a book" each Bailey book really is! The man who wrote this is a great scientist. He is a botanist. He is a taxonomist—an authority on palms. He is a horticulturist. Also he is an educator and an administrator. But besides all this he is a great philosopher of the kind that makes the earth rich and full and bounding with goodness. Here is one of the truly great minds and personalities of not only our time but of all time. His stature grows steadily with each passing day. And you can visit with him quietly in your study this evening as you read his thoughts and meditate upon them.

Yes, the earth that every fruit grower knows is like all earth—it is *holy earth*. It is entrusted to men to tend carefully and from which to bring forth fruits in due season. Surely, fruit growing is a business,

but it is more than a business—it is a way of life.

In the mad scramble for money and position and power, we are told that life is a matter of economics, supply and demand, survival of the fittest, and "all business." But this is only partly so. The real satisfactions are the ones that are the simplest, the plainest, the most readily available, and too often pushed aside and least esteemed until too late.

As the nights begin to lengthen and the harvest nears its end, stop just a moment and reflect on the manifold wonders of life—the loved ones, the friends, the growing trees, the brilliant stars, the magnificent sunsets, the fleecy clouds, the delicate starlight, and the fall colors. These go hand in hand with fruit growing, the choicest of all the forms of husbandry.

If you need a reminder, reach for Bailey's *Holy Earth*. If you do not possess a copy, get one. Or be so fortunate as to have a friend, someone like Mrs. Helen Hull, president of the American Horticultural Council, who in former years generously sent copies as remembrances at Christmas time! Yes, "The earth is the Lord's and the fullness thereof."

A New Weapon for an Old Enemy

ON page seven of this issue Dr. Goodman tells of the encouraging results obtained with such antibiotics as streptomycin and terramycin in the control of fire blight of apple. On the same page is reported the excellent results of Ohio tests of the new treatment; and reports from California tell of the use of dusts containing streptomycin for the control of this dread disease in pears.

To hasten the practical application of this type of treatment, Chas. Pfizer & Co., Inc., of Brooklyn, N.Y., is bringing out a commercial streptomycin-terramycin preparation for use next spring, to be called Agrimycin.

One can merely conjecture what vast changes may occur in the commercial production of pears, for example, to realize the far-reaching effect of this new means of controlling plant disease. Eastern pear production, now at an extremely low level because of the destruction of trees by

fire blight may again assume importance.

What a feeling of confidence growers can gain from the knowledge that a new weapon is at long last available to fight an old enemy.

Fruit Growing is Such Fun!



Fruit Talk

Yarwood, Hall, and Nelson of California have shown that the habit of certain snails, slugs, beetles, and insect larvae to eat rust-diseased portions of plants in preference to healthy tissue has some basis in fact, since **rust-infected bean leaves** are high in certain vitamins.

Judged by unloads of eight fresh fruits and vegetables at 10 large markets, **trucks gained 12,000 cars over railroads** from 1948 to 1951.

"Soil Management and Fertilizer for Orchards" from Purdue University (Extension Bulletin 385) is from the years of observation and experience of **Dr. C. E. Baker**, completed just two days before his death.

One gallon of approximately two per cent solution of potassium chloride (two pounds per 10 gallons of water) **poured into the tree hole** at the time of planting cherry trees has been shown by McManus and Kenworthy to **prevent potassium deficiency** on soils containing less than 50 pounds per acre of potash.

The Citrus Experiment Station in Florida has developed a **hedging machine** for citrus groves consisting of a column of 12-inch circular saws mounted in a vertical line and overlapping slightly which give a complete **vertical cutting line** that can be easily and efficiently moved down rows of trees to produce a hedge.

Civilian consumption of **fresh deciduous fruits and bananas** in 1952 was 67 pounds, fresh citrus 44 pounds, canned fruits 20 pounds, canned fruit juices 13 pounds, frozen fruits and fruit juices 6.5 pounds, and dried fruits 4.3 pounds.

World export of bananas is now back to "pre-war normal" with 10 million bunches (50 pounds). Significant changes are reductions in exports from **Mexico, Central America, and the Caribbean**, from 73.1 million pre-war to 53.7 million in 1952, whereas **South American exports** have expanded from 18.9 million pre-war to 35.2 in 1952.

The **Redhaven peach** is becoming increasingly popular in California. Growers received as much as 15 to 18 cents a pound in Los Angeles lugs for the fruit this year.

Ninety per cent of all **sour cherries** are processed, 80 per cent of **apricots**, 80 per cent of **grapes**, 78 per cent of **plums and prunes**, 53 per cent of **cranberries**, 50 per cent of **sweet cherries**, 46 per cent of **pears**, 46 per cent of **strawberries**, 42 per cent of **peaches**, and 26 per cent of **apples**.

World production of apples, including cider apples, is estimated at 676 million bushels in 1952-53, compared with 514 million in 1951-52 and a pre-war average of 498 million. Most of this increase occurred in **western Europe and Japan**.

—H.B.T.

Coming Next Month

- Taking the Jitters Out of Marketing by Selling Direct
- Enrich Your Vineyard Soil with Grape Prunings
- Why Let Your Trees Get Too High?
- Latest Pruning Pointers
- How to Correct Nutrient Deficiencies

AMERICAN FRUIT GROWER



"HANDY? THAT'S MY CAT D2 TRACTOR!"

PETER D'ARRIGO Concord, Mass.

"So many things you can do with the Cat Diesel Tractor in addition to preparing a fine seedbed. You can bulldoze, load and level...and do lots of other work. I'd highly recommend my D2 to any vegetable grower with 50 acres or more."

That's one man's opinion about his Cat Diesel Tractor. His opinion is shared by the thousands of vegetable and fruit growers all over the country—growers whose Caterpillar Diesel Tractors keep their work on schedule—save them labor...fuel costs...maintenance expense.

What about you? Would you like to cut your fuel bill by 60% to 80%? Many vegetable growers who have switched from gasoline to Caterpillar Diesel Tractors now save \$300 to \$500 annually.

What about you? Would accomplishing up to 50% more every hour save you on labor costs? Would you like to pull bigger loads...handle several jobs at once? That's an everyday experience of Caterpillar owners who have compared their tractors with ordinary wheel-type tractors...and know! A Cat D2 Tractor will pull approximately 3200 lbs. more than a wheel tractor of similar "rated" power.

What about you? How much money would you save...how much better would you farm...if in addition to usual tractor uses you could do your own bulldozing, land leveling, ditch and road building? You can with a Caterpillar Diesel Tractor!

What about you? Do you have spraying or picking schedules you must keep, regardless of mud, sand, or hills? You'll get through on time with a Cat track-type Tractor! With a D2, for example, you've more than 11 square feet of area contacting the ground...to pull you through...for maximum flotation. Compare this with about 2 square feet of ground contact area for most wheel-type orchard tractors.

What about you? Would you like to prove what a boost a Cat Diesel Tractor will give your farm or orchard? Call your Caterpillar dealer...NAME THE DATE...HE'LL DEMONSTRATE! Caterpillar Tractor Co., Peoria, Illinois.

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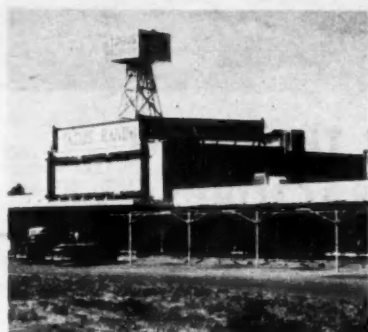
"There's only one real bargain in spark plugs —that's **CHAMPION**"



Says Mr. R. K. Schmidt, Superintendent of
TAGUS RANCH, Tulare, California.



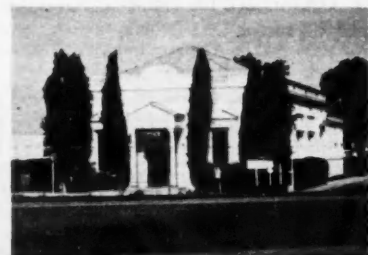
Tagus Ranch has 2000 of its 3500 acres in cotton, 1000 acres in peaches, nectarines and apricots, and the balance in boysenberries and blackberries.



The Tagus Restaurant and Highway Market on Route 99 is famous for its meals and for Tagus Ranch Brand fruit and berry products.



Cotton gin waste, long considered worthless, is now composted at Tagus. Applied three tons to the acre, it not only shows a higher value than 500 lbs. of 5-10-5 at comparable cost but adds some 90% of its bulk to the soil as organic matter.



Ranch buildings include the office (above), machine shop, carpenter shop, cotton gin, grocery and 200-pupil school.

Located in California's Kaweah Delta area, Tagus Ranch is one of the state's leading cotton growers and is widely known for its fruits and berries. It is the world's largest producer of boysenberries and blackberries, and its Merritt freestone peaches—named for Tagus Ranch owner, Mr. Hulett C. Merritt—grace the tables of New York's famed Waldorf-Astoria.

Berries, peaches, nectarines and apricots are canned or frozen and sold under the Tagus Ranch brand. They are grown in numerous varieties selected to ripen at varying dates thus prolonging the growing season and providing year-around employment for some 150 families. The ranch is irrigated by a concrete

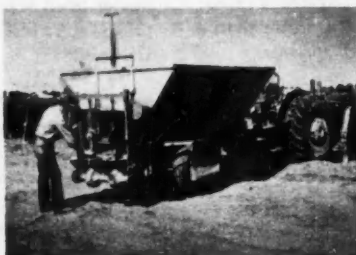
underground system supplied by sixty pumping plants with a total daily capacity of 97,000,000 gallons.

Mr. R. K. Schmidt, Ranch Superintendent says:

"With the quantity and variety of mechanized equipment used on the ranch, we are continually being confronted with claims that one or another brand of spark plug will give us equal performance for less, or better performance for the same price we pay for Champions. We give each one a fair test in some of our engines but always wind up with the same conclusion: there's only one real bargain in spark plugs—that's Champion! That's why we standardize on Champions for all our equipment including our personal cars."

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

For Dependability
CHAMPIONS
FOR EVERY TYPE ENGINE



Tagus has much special equipment such as this narrow, revolving disc spreader for the berry patches.



A few of the 150 truck and tractor units—all operating with dependable Champion Spark Plugs.

